PART 2
Request for Proposals

Technical Information & Requirements

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PART 2

REQUEST FOR PROPOSALS

TECHNICAL INFORMATION & REQUIREMENTS

1.0 DESIGN-BUILDER'S SCOPE OF WORK

.1 The project is located on Route 713 (Old Church Road) in Giles County just off Route 670 (Flat Hollow Road), approximately 0.3 mile south of Route 42. The limits of the proposed project begin at the intersection with Route 670 at the approaches and bridge over Walker Creek and end approximately 200 feet beyond the bridge. The length of the project is approximately 0.1 mile. Route 713 dead ends approximately 1.1 miles east of the bridge. However, it is noted that this description and length are approximate only and based on the preliminary design shown in the RFP Informational Package. The final project length may vary depending on the Offeror's final design and this fact shall be taken into account in the Offeror's proposal. There are two property owners on the east side of the bridge who will be impacted during construction. Access across Walker Creek must be maintained at all times during construction. East of the bridge there are a number of residences whose access will be affected by the project. The project site is only accessible by road via Route 670. A preliminary plan and profile has been developed for the design of the approaches and bridge. The Offeror is expected to generally follow the design depicted on these plans.

.2 The anticipated scope of work to be undertaken by the successful Offeror under the Design-Build contract for this Project is anticipated to include, among other things: (a) design; (b) construction; (c) demolition and removal of existing structure, (d) quality assurance and quality control for design and construction; and (e) overall project management. Brief descriptions of this anticipated work are set forth below. Offerors should note that all work performed on this Project shall be completed using English Units. Offerors should further note that VDOT has secured, on May 1, 2006, an FHWA-approved Programmatic Categorical Exclusion (PCE) in accordance with the requirements of the National Environmental Policy Act (NEPA). Offeror should note, however, that they are solely responsible for any schedule delays and associated costs due to permit acquisition, modifications and NEPA document re-evaluations associated with Offeror's design changes and no time extensions will be granted.

.3 Design services are anticipated to include any surveying, roadways, structures & bridge, traffic control devices (signs, pavement markings and marker plans), maintenance of traffic plans, drainage design, geotechnical investigation, borings and analysis, materials analysis, and hydraulic and hydrologic analysis. VDOT has performed a topographic survey and preliminary geotechnical investigation, however any additional information that the Offeror may need for their particular design shall be included in the Offeror's scope of work. Any design and geotechnical information provided by VDOT should not be considered complete and should be validated and augmented as necessary to provide the final design. Offeror should note that the pavement design is provided by VDOT.

.4 Preliminary investigations indicate there are no existing utilities that will be affected or impacted as part of this project. In the event that a utility conflict arises, relocations required for construction will be addressed through the process provided in Part 4, Article 9 of this RFP document.

.5 VDOT has acquired the right-of-way and temporary easements necessary for the construction of this project. The Offeror's proposed design should not exceed the current right-of-way limits shown on the Preliminary Plans. Any additional easements for construction staging areas shall be the responsibility of the Offeror.

.6 Construction services are anticipated to include roadway, traffic control devices, structures and bridge work, demolition and removal of existing roadways, dismantling and removal of existing structure, and all necessary foundation work, substructure and superstructure work, excavation, drainage, removal and disposal of hazardous materials, and erosion and sediment control and all other environmental requirements and commitments including those from the approvals and permits secured through VDOT's Interagency Coordination Meeting ("IACM") process, as well as all other environmental commitments from the PCE. Offerors will also be expected to provide construction engineering inspection and management, quality assurance and quality control, including plant quality assurance inspection and testing, but excluding items listed under Section 2.11.2 below.

.7 VDOT will obtain the environmental clearances (unless otherwise noted herein) and water quality permits noted in Part 4 (General Conditions of Contract), Exhibit 3.5.1. The Offeror will be responsible for coordination with VDOT and performing necessary design, including but not limited to permit sketches, to support VDOT's efforts to obtain the necessary water quality permits and any subsequent modifications. VDOT will also obtain necessary water quality permits for geotechnical work performed by the Offeror. The Offeror shall be responsible for all other clearances and permits.

.8 The Offeror will be responsible for any environmental studies in support of a re-evaluation of the NEPA document caused by Offeror's proposed changes in scope or design. Offeror will be responsible for notifying VDOT of plan revisions and providing any necessary information to support VDOT's completion and updating of environmental clearances. Offeror should note, however, that they are solely responsible for any schedule delays and associated costs due to permit acquisition, modifications and NEPA document re-evaluations associated with Offeror's design changes and no time extensions will be granted.

2.0 PROJECT TECHNICAL INFORMATION & REQUIREMENTS

2.1 Standards and Reference Documents

The design and construction work shall be performed in accordance with the following Standards, Specifications and Reference Documents. The Offeror must verify and use the latest version of the documents listed herein. If a specific Standard, Specification or Reference Document is

not listed herein, VDOT's Point of Contact or Project Manager shall identify the pertinent Standard, Specification, or Reference Document to the Offeror. The Offeror must meet or exceed the minimum roadway design standards and criteria.

- VDOT 2002 Drainage Manual (including current Errata Sheet)
- VDOT Hydraulic Design Advisories (all current)
- VDOT CADD Manual (Version 2004)
- VDOT Construction Manual (2005)
- VDOT Post Construction Manual (1997 Edition)
- VDOT Construction Inspection Manual (December 2001)
- VDOT Traffic Engineering Design Manual
- VDOT 2003 Minimum Standards of Entrances to State Highways
- VDOT Right of Way and Utilities Division Manuals, Vol. I (July 1999) and II (November 2003)
- VDOT Current Land Use Permit Manual
- VDOT Policy Manual for Public Participation in Transportation Projects (updated September 2004)
- VDOT Instructional & Information Memorandums (I&IM)All Divisions
- VDOT Road and Bridge Standards, Vol. 1 and Vol. 2 (2001)
- VDOT Road and Bridge Specifications (2002) , including all revisions
- VDOT Guardrail Installation Training (GRIT) Manual Dated February 2006
- VDOT Road Design Manual, Vol. I
- VDOT Guidelines for 1993 AASHTO Pavement Design, Revised – May 2003
- VDOT Survey Manual (2002 Edition)
- VDOT Manual of Instruction for Material Division
- VDOT Manual of Structure and Bridge Division, Vol. III, V, and VII
- VDOT Structure and Bridge Checklists as posted on VDOT website
- VDOT 2005 Virginia Work Area Protection Manual
- VDOT Mobility Management Division Memoranda
- AASHTO Standard Specification for Seismic Design of Highway Bridges
- AASHTO Standard Specifications for the Design of Highway Bridges 1996, 1997 and 1998 Interim Specifications and VDOT Modifications
- AASHTO A Policy on Geometric Design of Highways and Streets (2004)
- AASHTO Guide Specifications for Horizontally Curved Highway Bridges (Current Edition)
- AASHTO Fracture Critical Non-Redundant Steel Bridge Members Current Spec. with all Interim Specifications
- AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaries, and Traffic Signals, 1994 Edition
- AASHTO Guide for the Development of Bicycle Facilities (1999)
- AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities (2004)
- AASHTO Guide for Design of Pavement Structures (Rigid Pavement and Flexible Pavement) (1993 Edition)

- USDOT FHWA Standard Highway Signs
- National Electric Code (NEC)
- Manual of Uniform Traffic Control Devices (MUTCD)
- Virginia Supplement to MUTCD
- DCR Virginia Stormwater Management Handbook (First Edition – 1999)
- DCR Virginia Erosion and Sediment Control Handbook (Third Edition – 1992)
- Americans with Disabilities Act Accessibility Guidelines for State and Local Government Facilities
- Transportation Research Board Highway Capacity Manual, Third Edition (1994)
- Special Provision for Density Control of Embankments and Backfill (Included in the RFP Information Package – CD-ROM)
- Special Provision for Construction of Deep Foundation Systems (Included in the RFP Information Package – CD-ROM
- Special Provision for Low Permeability Concretes (Included in the RFP Information Package – CD-ROM
- Route 713 Geotechnical Engineering Data Report (Included in RFP Information Package – CD-ROM)
- Revised Sections of Chapter 3 of the VDOT Manual of Instructions for Material Division

If there is a discrepancy between the VDOT Manual of Instruction (MOI) for Materials Division and other Standards and References listed herein, then the MOI should take precedence. Special Provisions included in this contract document or other Special Provisions selected for use in design and construction of this project that has been approved by VDOT will govern over the MOI. Special Provision Copy Notes approved by VDOT and requirements specified within the text of this RFP will govern over both the Special Provisions and MOI.

2.2 Structure and Bridge

The proposed bridge over Walker Creek shall be designed for HS20-44 Loading and Alternate Military Loading. Low permeability concrete shall be used for the construction of the entire bridge. It is the Department's goal to design and build a low maintenance bridge, therefore, design consideration according to VDOT Manual of Structure and Bridge Division Vol. V shall be given for an integral abutment/jointless bridge where applicable. (Addendum #1) For truss type structures, galvanized or weathering steel is acceptable and no other type of coating will be permitted.

Railing shall be either Kansas Corral Railing or Illinois Steel Railing in conformance with VDOT standards; any other type of railings is subject to approval by the Department. (Addendum #1) VDOT will consider alternative railings that are crash tested to NCHRP Report 350 evaluation criteria and accepted by the FHWA for its intended application. The Offeror is responsible for providing documentation of this testing and approval in support of its proposed design.

Dead load deflections shall be computed and shown on the drawings, and in addition a camber diagram shall be shown. The deflections are those anticipated to occur in the beam upon placement

of the concrete deck, diaphragms, curbs and railing. In the event pre-stressed concrete beams are used, the camber for beams shall be shown on the plans giving the expected net camber, which should be the amount of rise that should occur at mid-span when stress transfer is made and the member is freely resting on storage supports. Sequence of placement operations for beams or girder construction shall be given, and all erection stresses shall be computed where necessary for design. A summary table of moments, shears, reactions and stresses for primary load carrying members shall be included in the plans.

The Offeror shall perform a structural load rating using the load factor method. For bridge structures designed with curved girders, the rating shall be performed using the design drawings and DESCUS software with rating capability. For all other bridge structures the Offeror shall perform a structural load rating using the design drawing and PC-BARS software with rating capability. All rating calculations shall be performed in accordance with VDOT's Structure and bridge Division Instructional and Informational Memorandum Number S&B 94-27.4, AASHTO'S Manual for Condition Evaluation of Bridges 1994 and 23 CFR 650 Subpart C - National Bridge Inspection Standards, Subsection 650.301.

The Offeror shall deliver to VDOT a load rating report containing a completed copy of VDOT's current load rating summary sheet signed by a professional engineer, rating assumptions, pertinent analysis calculations and DESCUS or PC-BARS computer input. In addition, a diskette containing the DESCUS or PC-BARS rating input files shall be delivered to VDOT with the report.

The existing bridge is Type B and shall be demolished and removed in accordance with Road and Bridge Specification Section 413 and other requirements as applicable.

2.3 Environmental

2.3.1 Environmental Document:

A Programmatic Categorical Exclusion (PCE) was approved by the Federal Highway Administration (FHWA) on May 1, 2006 for the project. The Offeror shall carry out environmental commitments during design and construction, as applicable, as identified in the document. All commitment compliance shall be supported by appropriate documentation and provided by the Offeror to the VDOT Project Manager. Any changes proposed by the Offeror in either the footprint or scope of the project (as expressed in the PCE) must be coordinated by the Offeror and approved by VDOT. Changes in the footprint or scope may necessitate additional environmental studies and coordination by VDOT with the FHWA. The Offeror shall carry out any additional environmental commitments as a result from re-coordination and will be responsible for any schedule delays and associated costs. Additional information is set forth in Section 1.0 above, and the PCE as set forth in Attachment 2.3.1(a).

2.3.2 State Environmental Review Process (SERP):

The State Environmental Review Process has been completed by VDOT. The Offeror shall carry out SERP commitments as addressed herein. All commitment compliance shall be supported by appropriate documentation. If the project area of impact (design footprint) changes during the design/build process, the Offeror shall initiate SERP again by completing and transmitting an early notification form and description of changed conditions to the VDOT Project Manager. The Offeror will be responsible for any schedule delays and associated costs. VDOT will complete the SERP and the Offeror shall carry out any additional SERP commitments.

2.3.3 Water Quality Permits

VDOT will obtain the water quality permits noted in Part 4 (General Conditions of Contract), Exhibit 3.5.1. The Offeror will be responsible for all design and fieldwork, including but not limited to permit sketches, to support acquisition of the water quality permits, including compensation and mitigation. The VDOT Inter-Agency Coordination Meeting (IACM) process, information requirements and timeframes for water quality permit review and issuance shall be coordinated through VDOT's Project Manager. Prior to the IACM presentation of the permit application, VDOT will review the roadway design to determine if adequate effort has been made to avoid and minimize impacts to all water resources. The Offeror shall not proceed with work covered by the permits until the VDOT Project Manager releases the work in writing. The time frame for plan review and approval shall be within 21 days after receipt by VDOT. The Offeror will be responsible for compliance with pre-construction and construction-related permit conditions. The Offeror shall assume all obligations and cost incurred by complying with the terms and conditions of the permits and certifications. Any fines associated with environmental permit or regulatory violations shall be the responsibility of the Offeror.

2.3.4 Miscellaneous Environmental

VDOT has acquired the temporary easements for construction. Additional staging area, if necessary, is to be obtained by and is the responsibility of Offeror. The Offeror must obtain review and approval by the VDOT prior to establishment or agreement for additional staging area. Additional staging area may require a re-evaluation of the NEPA document and process. In addition, the Offeror shall be responsible for the cost of any environmental studies in support of a re-evaluation of the NEPA document caused by any proposed changes in scope, footprint, or design. Offeror should note that they are solely responsible for any schedule delays and associated costs due to environmental document modifications or undesirable outcomes related to re-evaluation of the NEPA document and process. The staging and storage areas shall be consistent with Road & Bridge Specification 106.08.

2.3.5 Environmental Monitoring

VDOT will monitor the project during construction to ensure compliance with all applicable environmental laws, regulations, Executive Orders, commitments, etc. If at any time, the Offeror is not in compliance with all applicable environmental laws, regulations, Executive Orders, commitments, etc., VDOT has the authority to suspend work, in whole or in part, until such time as

the deficiencies have been corrected. The Offeror shall be responsible for any schedule delays and associated costs as a result of any shut downs associated with non-compliance. Any monetary fines associated with violations shall be the responsibility of the Offeror.

2.4 Virginia Occupational Safety and Health Standards (VOSH)

The Project shall comply with Section 110.05 of the Road & Bridge Specifications

Additionally at a minimum, all Contractor personnel shall comply with the following, unless otherwise determined unsafe or inappropriate in accordance with OSHA regulations:

.1 Hard hats shall be worn while participating in or observing all types of field work when outside of a building or outside of the cab of a vehicle, and exposed to, participating in or supervising construction.

.2 Respiratory protective equipment shall be worn whenever an individual is exposed to any item listed in the OSHA Standards as needing such protection unless it is shown the employee is protected by engineering controls.

.3 Adequate eye protection shall be worn in the proximity of grinding, breaking of rock and/or concrete, while using brush chippers, striking metal against metal or when working in situations where the eyesight may be in jeopardy.

.4 Safety vest shall be worn by all exposed to vehicular traffic and construction equipment.

.5 Standards and guidelines of the current Virginia Work Area Protection Manual shall be used when setting, reviewing, and removing traffic controls.

.6 Flag persons shall be certified according to the Virginia Flagger Certification Program.

.7 No person shall be permitted to position themselves under any raised load or between hinge points of equipment without first taking steps to support the load by the placing of a safety bar or blocking.

.8 Explosives shall be purchased, transported, stored, used and disposed of by a Virginia State Certified Blaster in possession of a current criminal history record check and a commercial driver's license with hazardous materials endorsement and a valid medical examiner's certificate. All Federal, State and local regulations pertaining to explosives shall be strictly followed.

.9 All electrical tools shall be adequately grounded or double insulated. Ground Fault Circuit Interrupter (GFCI) protection must be installed in accordance with the National Electrical

Code (NEC) and current Virginia Occupational Safety and Health agency (VOSH). If extension cords are used, they shall be free of defects and designed for their environment and intended use.

.10 No person shall enter a confined space without training, permits and authorization.

.11 Fall protection is required whenever an employee is exposed to a fall six feet or greater.

2.5 Survey

VDOT has completed a Class I Bridge Survey for this location.

In the event additional survey is needed, the Offeror shall complete survey according to VDOT Survey Manual, conforming to VDOT Standards, including but not limited to the following:

- Horizontal control
- Vertical control
- Notification of property owners
- Post photography control
- Additional aerial photography, if necessary, negatives become property of VDOT
- Photogrammetry
- Field data
- Topography
- Property data
- Underground utilities
- Levels
- DTM
- Bridge site plans, water and railroads
- Submit complete digital files to VDOT upon completion of survey for review and archival in accordance with the current VDOT CADD Manual.

2.6 Geotechnical Work

VDOT has performed a preliminary geotechnical subsurface investigation for this project. The investigation performed included four test borings drilled in the area of the anticipated proposed bridge relocation. The results of this investigation, along with the boring logs, are presented in the Geotechnical Engineering Data Report included in the RFP Information Package for this project. The approximate location of the borings is graphically depicted on the preliminary design plans provided in the RFP Information Package.

The data provided is for informational purposes and not intended to provide adequate geotechnical information for offeror's final design. The information provided may be incorporated in the planning of the geotechnical investigation program the Offeror is required to perform for the purpose of the

final design as discussed below. The data included in this RFP is being provided in accordance with Section 102.04 of Division Amendments of the Standard Specification (Part 5). The Offeror is required to perform a design level geotechnical engineering investigation to validate and augment the geotechnical information contained in this RFP. The geotechnical engineering investigation performed by the Offeror should meet or exceed both the requirements outlined in the Revised Sections of Chapter 3 of the Manual of Instruction (MOI) for the VDOT Materials Division and the current AASHTO Standard Specifications for the Design of Highway Bridges 1996, 1997, and 1998 Interim Specifications.

The Offeror shall collect appropriate data for geotechnical evaluation of embankments, soil and rock cuts, culvert, bridge and wall structures, noise barriers , storm water management structures and ponds, minor structures including drainage pipes, and any other earth supported structures or elements of highway design and construction. Complete laboratory tests in accordance with pertinent ASTM or AASHTO standards and analyze the data to provide design and construction requirements. Soils and materials tests shall be performed by a laboratory accredited by AASHTO/AMRL for each test it conducts for the project, unless otherwise approved by VDOT.

The Offeror shall provide all records of subsurface explorations. The Offeror shall describe the soils and rock encountered and their depth limits in accordance with the requirements outlined in the Revised Sections of Chapter 3 of the MOI for the VDOT Materials Division (Part One, Exhibit 4.3.2.1). The Offeror shall provide electronic copies of all subsurface explorations in accordance with the boring log template available on the VTRC website: http://matrix.vtrc.virginia.edu/ginthelp/info.shtml. The electronic files shall be provided by a certified professional geologist or a qualified registered professional engineer in the Commonwealth of Virginia, responsible for geotechnical engineering, in gINT© software. Note each exploration shall be referenced to Latitude and Longitude, NAD 83, in decimal degrees accurate to the nearest foot, and elevation accurate to decimal feet. Upon request, VDOT will provide its gINT and ACCESS file structures for the Geotechnical Database Management System (GDBMS)

The Offeror shall incorporate reliability assessments in conjunction with standard analysis methods, to verify the acceptable settlement, capacity or factor of safety of each foundation, wall, embankment, or slope design (e.g. refer to Duncan, J.M. (April 2000) *Factors Of Safety And Reliability In Geotechnical Engineering*, Journal of Geotechnical and Geoenvironmental Engineering, ASCE, Discussions and Closure August 2001). A suitable design will provide a probability of success equal to or greater than 99 percent.

The Offeror shall provide geotechnical design and construction memoranda that summarize pertinent subsurface exploration, test, and engineering evaluations. Provide technical specifications for construction methods that are not adequately addressed in the Standard Specifications. The Offeror shall review the construction documents to assure that they have appropriately incorporated the geotechnical components. The QA/QC reports shall document how each specific geotechnical recommendation or requirement is addressed in the construction documents, and shall reference the drawings that incorporate the pertinent results. The results of the geotechnical investigation and

laboratory testing results shall support design and construction efforts to meet the following performance requirements:

2.6.1 Pavement Design

The Offeror shall be responsible for validating the suitability of the minimum pavement section provided below, and if deemed inadequate increase the pavement layer thicknesses subject to VDOT approval. The Offeror will be responsible for the final design and construction of the pavement.

Rte 670 Approach:
Surface: 1.5 inches Asphalt Concrete Type SM-9.5AL
Base: 3.0 inches Asphalt Concrete Type BM-25.0
Subbase: 6.0 inches Aggregate Material, Type I, 21-B

Rte 713 Approach:
Surface: 2.0 inches Asphalt Concrete Type SM-9.5AL
Subbase: 8.0 inches Aggregate Material, Type I, 21-B

2.6.2 Geotechnical Requirements

Minimize differential settlement of the approach to the bridge (bump at the bridge) for new construction. Provide construction recommendations to address soil-structure interaction and to accommodate the unique construction methods applied to this project. All geotechnical work shall be completed to satisfy baseline and post-construction contract performance requirements.

- Note that the lesser amount of total or differential settlement satisfying this section shall have precedence.

Design pavements, subgrades, and embankments for the following post-construction settlement tolerances:

- Longitudinal settlement less than one-inch over 200 feet; Settlement in cross section less than two-inches over 24 feet, and
- Total settlement less than two inches over any 20-year-period, and
- Settlement less than a magnitude that will result in damage to adjacent or underlying structures, including utilities.
- For pavement sections of approach slabs, bridge decks, and tie-ins to the Project, grade tolerances shall be measured with a 10-foot straightedge. The variation of the surface from the testing edge of the straightedge between any two contacts with the surface shall not be more than + ¼-inch to - $^{1}/_{8}$-inch at structures and +/- ¼-inch at project tie-ins.

Humps and depressions exceeding the specified tolerance will be subject to correction by the Offeror. Offeror shall notify the Quality Assurance Manager (QAM) and VDOT for any non-conformance items.

Design foundations such that the maximum post-construction foundation settlement shall:

- Be less than two inches over the life of the structure, and be in accordance with the requirements of the Design-Builder's structural engineer, whichever require the least settlement. Coordinate with the Design-Builder's structural engineer to develop design criteria to mitigate structural damage or regular maintenance of structure and substructure elements
- Further, the maximum differential settlement between adjacent bridge or structure foundations shall be in accordance with AASHTO requirements, or in accordance with the requirements of the Design-Builder's structural engineer, whichever require less settlement

Design stable cut slopes and embankment slopes. Evaluate stability for interim construction stages, for the end of construction condition, and for design-life conditions. Design shall satisfy the following criteria:

- The maximum slope ratio to be used for cut and/or embankment fill slopes shall not be steeper than 2H:1V
- The minimum factor of safety against failure shall be 1.5 for the life of the road or slope, determined by appropriate limit equilibrium methods
- Incorporate reliability assessments as referenced above.

2.7 Hydraulics

2.7.1 General:

Work required under this Contract shall be performed in accordance with the criteria contained in the referenced documents, which are incorporated by reference to this Project Scope.

2.7.2 Hydrologic and Hydraulic Analysis (H&HA) & Scour Analysis

VDOT has completed a preliminary H&HA analysis for the conceptual bridge layout depicted in the Preliminary Design Plans. This analysis is provided in the RFP Information Package. VDOT is providing this information for a conceptual layout of the bridge; therefore, Offerors may provide alternative layouts along with a supporting H&HA and Scour Analysis. Offerors must perform a final H&HA in accordance with the guidelines presented in Chapter 12 of the current "VDOT Drainage Manual" (including the current Errata Sheet and any applicable Hydraulic Design Advisories) for the Offeror's bridge layout of the Bridge over Walker Creek. Furthermore, the final H&HA and Scour Analysis must be reviewed and approved by VDOT prior to starting construction.

2.7.3 Drainage

The drainage design work shall include the design of culverts, open channels, storm sewers, erosion and sediment control and stormwater management facilities in compliance with the standards and reference documents listed previously in Section 2.1 and the VDOT Erosion and Sediment Control & Stormwater Management Program.

2.7.4 Stormwater Management Plan and Erosion and Sediment Control:

An Erosion and Sediment Control (ESC) Plan and a Stormwater Management Plan must be prepared and implemented in compliance with the Erosion and Sediment Control Law, the Erosion and Sediment Control Regulations, the Stormwater Management Act, the Stormwater Management Regulations and the latest Virginia Department of Conservation and Recreation (DCR) approved version of the VDOT Erosion and Sediment Control and Stormwater Management Program Manual. The Offeror must certify that the Erosion and Sediment Control and Stormwater Management Plans have been designed and reviewed in accordance with DCR laws and regulations and VDOT policies and procedures. A qualified person, other than the designer, who is certified under DCR guidelines, must independently review and certify the ESC Plans. The Offeror will be responsible for compliance with construction-related permit conditions and shall assume all obligations and cost incurred by complying with the terms and conditions of the permit. Any fines associated with permit or regulatory violations shall be the responsibility of the Offeror.

2.7.5 Virginia Stormwater Management Program (VSMP) Construction Permit:

If the land-disturbing activity is 1 acre or greater (2500 square feet or greater in a Chesapeake Bay Preservation Area), a VSMP Construction Permit is required. The Offeror, as necessary, shall make determination of need, coordinate, and submit required information to the VDOT Project Manager. VDOT will review the submitted information and the VDOT Project Manager will obtain the VSMP Construction Permit as required. The Offeror shall not proceed with work covered by the permit until the VDOT Project Manager releases the work in writing. The Offeror will be responsible for compliance with pre-construction and construction related permit conditions. The Offeror will be responsible for compliance with construction-related permit conditions and shall assume all obligations and cost incurred by complying with the terms and conditions of the permit. Any fines associated with permit or regulatory violations shall be the responsibility of the Offeror. The Offeror shall also have on-site during land disturbing operations an individual or individuals holding a DCR Inspector Certification, a DCR Responsible Land Disturber (RLD) Certification and a VDOT Erosion and Sediment Control Contractor Certification (ESCCC) to ensure compliance with all requirements.

2.8 Traffic Control Devices

Project shall include all signs and pavement markings as follows:

2.8.1 Signs

Project shall include all required modifications to existing signs and structures and all necessary new signs and structures. Existing sign inventory shall be completed prior to site demolition. Information shall be shown in enough detail to both indicate existing sign placement, sign support types and all components as well as non-standard sign design criteria (size, text, spacing, color, etc). This existing information shall be submitted at the same time as the first plan submittal for proposed signing. Installation of temporary construction signs and permanent signs shall be included in the design and shall be installed in accordance with the 2005 Work Area Protection Manual and WSP-1 of the Road and Bridge Standards. Permanent signs shall be designed and installed in accordance with the MUTCD manual.

2.8.2 Pavement Marking/Markers

Project does not require pavement marking.

2.8.3 Guardrail

Project shall include all necessary guardrail, fixed object attachments, end treatments and any incidental guardrail items. The Offeror shall develop a guardrail layout and installation plan and submit to the VDOT Project Manager for review and approval. Guardrail and related components shall be designed and installed in accordance with the VDOT Guardrail Installation Training (GRIT) Manual dated February 2006, the 2001 Road & Bridge Standards with any subsequent revisions, and the Manufacturer's Specifications.

2.9 Right of Way

VDOT has acquired the right-of-way for project construction and temporary easements to provide access for construction operations related to new bridge construction and demolition of the existing structure. The location of such right of way and easements are graphically depicted in the Preliminary Design Plans. The Offeror's proposed design should not exceed the proposed right of way as shown on the preliminary plans. Upon project completion, the Offeror shall provide and set VDOT RM-2 right of way monuments within the project limits.

2.10 Utilities

Preliminary investigations indicate there are no existing utilities that will be affected or impacted as part of this project. In the event that a utility conflict arises, relocations required for construction will be addressed through the process provided in Part 4, Article 9 of this RFP document.

2.11 Quality Assurance / Quality Control (QA/QC)

The Design-Builder shall submit its QA/QC Plan for both design and construction to VDOT for review and approval at the meeting held after the Date of Commencement as set forth in Part 4 General Conditions under Section 2.1.2. Along with the QA/QC Plan submittal, the Offeror's

Quality Assurance Manager (QAM) and Design Manager shall provide a presentation of the QA/QC Plans for design and construction utilizing Project related scenarios.

2.11.1 Design Quality Management Plan

The Offeror is responsible for design quality. The Design Manager, assigned by the Offeror, shall be responsible for overall management of the QA/QC programs for design. This individual shall report directly to the Offeror's Project Manager and is responsible for all of the design QA/QC activities. The Design Manager shall maintain close communication with Offeror's Project Manager and shall ensure the Project is completed in accordance with the requirements of the Contract Documents. The Design Manager shall perform all of the design oversight reviews. VDOT will participate in these reviews. Under this procedure, the Design Manager will provide VDOT with draft design plans for review and approval to confirm that the design work complies with the requirements of the Contract Documents, especially Section 2.4 of the General Conditions and the Standard and Reference Documents listed in Section 2.1 herein prior to initiation of construction activities on the Project.

Plans to be reviewed shall be submitted to VDOT's Project Manager who will distribute plans to appropriate VDOT and FHWA staff for review and approval. VDOT and FHWA shall have the right to review and comment on all Draft Plans and Specifications for compliance with the requirements of the Contract Documents and Reference Documents. The Offeror shall be responsible to satisfy all such requirements and acknowledge that VDOT and FHWA will have the right to disapprove any design approach that it is not in compliance with the requirements of the Contract Documents and Referenced Documents unless said approach was previously approved in writing by VDOT and FHWA

The written approval of the modifications should be attached with the draft plans submitted for review. The Offeror shall revise and modify all draft design plans so as to fully reflect all comments and shall deliver to VDOT's Project Manager the revised submittal. The Project Manager will distribute plans to appropriate VDOT and FHWA staff for review and comments.

Final plans are to be submitted to VDOT and FHWA for review and approval by the Chief Engineer prior to the construction of that element. The time frame for plan review and approval shall be in accordance with the requirements outlined in the Contract Documents. Any structures requiring Federal Highway Administration (FHWA) approval shall be submitted as outlined in Volume III-2-08 of the Manual of the Structure and Bridge Division. The Offeror shall be responsible for the design details and ensuring that the design and construction work are properly coordinated. VDOT Formal acceptance of the design will occur at the time of Final Acceptance as provided in the Contract Documents.

2.11.2 Construction Quality Management Plan

The plan requires that the Offeror shall have the overall responsibility for both the QA and QC activities for construction. The Offeror shall be responsible for 100% QA work and QA sampling and testing for all materials. These functions shall be performed by an independent firm that has no involvement in the construction QC program/activities. Offeror will also be responsible for providing quality assurance and testing for all materials manufactured off-site, excluding the items listed below:

- Prestressed Concrete Structural Elements (beams, girders (AASHTO and bulb-T), and piles)
- Structural Steel Elements (beams and girders)
- Pipe (concrete, steel, aluminum and high density polyethylene) for culverts, storm drains and underdrains
- Precast Concrete Structures
- Metal Traffic Signal and Light Poles and Arms
- Asphalt Concrete Mixtures
- Aggregate (dense and open graded mixes)
- Hydraulic Cement Concrete Mixtures

The Department will provide plant quality assurance and plant testing of the eight items noted above. The Offeror will be responsible for providing quality assurance and testing of materials obtained from off-site soil borrow pits.

The Offeror's Quality Assurance Manager (QAM) shall report directly to the Offeror's Project Manager and be independent of the Offeror's roadway, bridge and otherwise physical construction operations. The QAM will be responsible for the quality assurance (QA) inspection and testing of all materials used and work performed on the project to include monitoring of the Contractor's quality control (QC) activities. The QAM shall be vested with the authority and responsibility, to stop any work not being performed according to the Contract requirements. The construction QA and QC inspection personnel shall perform all of the construction inspection and sampling and testing work that is normally performed by VDOT, as prescribed in the Construction Manual, Inspection Manual, Materials Manual of Instructions, and all other applicable Reference Documents. This includes the documentation of construction activities and acceptance of manufactured materials.

VDOT's role during construction operations will be limited to verification sampling and testing, independent assurance, review and processing progress payments, and limited oversight of the Offeror's construction management scheduling, document control and other project control and project management/administration efforts necessary to properly administer and manage the Project. All construction QA and QC personnel shall be VDOT certified when testing hydraulic cement concrete, asphalt concrete, soils and aggregate compaction, pavement markings and, for the safety and use of nuclear testing equipment. The QA programs must be performed under the direction of the QAM. The QC programs should be performed under the direction of the Construction Manager. Substitution of the Construction Manager and the QAM shall require VDOT approval. In addition, VDOT shall have the right to order the removal of any construction QA and QC personnel to include the QAM and the Construction Manager for poor performance at the sole discretion of the VDOT

Project Manager. The plan shall include rapid reporting of non-compliance to the VDOT Project Manager, and the remedial actions to be taken as discussed in Section 105.12 of the Division 1 Amendments to the Standard Specifications (Part 5).

2.12 Maintenance of Traffic

The Offeror shall submit a sequence of construction narrative to the VDOT Project Manager prior to the commencement of work. Due to the existing bridge being used for maintenance of traffic, no road closures (Addendum #1) or detours are permitted on Route 713~~anticipated~~ during construction. No road closures or detours will be allowed on Route 670 during construction. Temporary lane closures may be permitted on Route 670 if the following criteria are met: one lane is open to traffic at all times; this open lane is a minimum of 12-feet in width; the duration of any lane closure does not exceed four months duration; and the lane closure meets all related requirements of the current MUTCD and Work Area Protection Manual. In the event the Offeror determines a need to ~~close the road or~~ restrict traffic, Offeror shall provide a written request to the VDOT Project Manager listing the reasons for the desired action and a plan outlining the work activities and desired time frame. The VDOT Project Manager's approval of the request is required prior to commencement of the requested activities.

2.12.1 Holiday and Weekend Restrictions

The Design-Builder shall check with the appropriate district and residency office for information on holiday, weekend, and weekday restrictions for lane closures, maintenance, and construction work.

Except as is necessary to maintain traffic and subject to the Department's prior approval, construction work shall not be performed on Sundays or the following holidays without the permission of the Department: January 1, Memorial Day, July 4, Labor Day, Thanksgiving Day, and Christmas Day.

If any of these holidays occurs on a Sunday, the following Monday shall be considered the holiday.

2.12.2 Emergency Management Plan and Coordination

During emergencies, the Offeror shall coordinate with federal, state and local agencies, including the Virginia State Police, local emergency response providers, VDOT's maintenance workers (including snow and ice removal workers), utility owners, and local municipal and county governments.

2.13 Public Involvement / Relations

VDOT will be responsible for all Public Involvement to include public relations during both the design and construction phases in accordance with the VDOT Policy Manual for Public Participation in Transportation Projects, updated September 2004. In the event a request is made to

the Offeror during construction for information, the Offeror shall be responsible for forwarding such requests to the VDOT Project Manager and supporting VDOT with providing an appropriate response. The Offeror shall submit any proposed changes in the sequence of construction or maintenance of traffic plan to the VDOT Project Manager in order to notify the public of changes in traffic patterns, lane closures, etc.

2.14 Plan Preparation

2.14.1 MicroStation

When the Offeror is given the NTP, they will be furnished MicroStation (current version used by VDOT) and VDOT Standard Resources Files, which run in WindowsNT or Windows2000 only.

2.14.2 Software License Requirements

VDOT shall furnish license(s) for all the software products VDOT makes available to the Offeror. The License(s) will be supplied upon request by the Offeror, based on the data provided on a completed Software License Form, LD-893, and subsequently reviewed and approved by the VDOT Project Manager.

All License(s) are provided for use on the project detailed on the request only for the duration specified for that project. Any adjustment made to the project schedule will be taken into consideration in adjusting the time the license(s) are available. Justification for the number of license(s) requested **MUST** include the estimated number of total computer hours for the task of design, detailing, relating project management and other computer based engineering functions requiring the software requested.

The appropriate use of all license(s) provided to the Offeror will become the responsibility of the Offeror regardless of who on the team uses the license(s). The Offeror will be responsible for keeping track of the license(s) provided to them or a team member and the prompt return of the license(s) and removal of the software from any system used solely for the project for which it was obtained.

2.14.3 Drafting Standards

All plans shall be prepared in accordance with the most recent version of the VDOT's Road Design Manual, Vol I, VDOT's CADD Manual and VDOT's Instructional & Informational Memoranda (I&IM) and VDOT's Manual of Structure and Bridge Division, Vol. V, Part II.

The approved plans shall be furnished by the Offeror with appropriate signature and seal blocks on the title sheets indicating approval for construction.

2.14.4 Electronic Files

Plans shall be submitted in electronic TIFF format along with all Microstation and Geopak design files. VDOT will furnish electronic files of all applicable standard detail sheets upon request by Offeror. Standard detail sheets are available in electronic format using CADD Microstation. The files will use standard VDOT cell libraries, level structures, line types, text fonts, and naming conventions as described in the most recent version of the VDOT CADD Manual. Files furnished to Offeror in electronic format shall be returned to VDOT and removed from Offeror and its designer's computer equipment upon completion of this contract.

2.14.5 Bridge Plans

Each sheet of the contract plans shall be completely dimensioned, and all elevations necessary for construction purposes shall be shown. In steel construction, complete details shall be furnished showing all sizes and overall dimensions of members, number and arrangement of all fasteners at joints, type and size of welds, except that they need not be dimensioned as completely as shop plans. This work shall be performed to the same degree of refinement as that performed by VDOT in its current work as will be shown upon request by specimen drawings.

2.14.6 Construction Plans

Plans may be submitted as soon as sufficient information is available to develop Construction plans for certain portions or elements of the Project. These plans will be issued for construction following approval by VDOT's Chief Engineer. The roadway or bridge plans may be submitted to VDOT in logical subsections (such as from bridge to bridge) and consisting of work packages such as: 1) clearing and grubbing along with erosion and siltation control, grading and drainage 2) paving, and 3) traffic control. Individual bridge plans may be submitted to VDOT in logical components such as: 1) foundation, 2) remaining substructure, and 3) superstructure.

2.14.7 As-Built Plans

As-Built Plans shall be provided with the final application of payment. These plans will show all adjustments and revisions to the Construction Plans made during construction and serve as a permanent record of the actual location of all constructed elements. These plans will be provided in both hard copy and electronic formats.

2.14.8 Deliverables

- Hard Copy paper plans
- Electronic plans on CD or other approved media
- Complete set of Project Records not limited to, but shall include: Working Drawings, Shop Drawings, Design Calculations, Guarantees/Warranties, Instruction Manuals, Special Tools, etc.
- Project Correspondence
- Project Dairies, Test Reports, Invoices, Materials Books and certified survey records.

2.15 Field Office

The Offeror shall provide office space, equipment, and services consistent with requirements for a Type II Field Office. This field office should be configured and equipped for joint operations by Offeror and Department staff. The configuration and equipping of the field office shall be coordinated between the Offeror and the VDOT Project Manager prior to on-site placement of the field office. The field office will be operational throughout the duration of the project and shall be removed upon final project acceptance.

END OF PART 2
REQUEST FOR PROPOSALS